

DRAWING AMENDMENTS:

Please enter the replacements sheets of drawings attached to this Amendment.

The replacements sheets include revisions in Figures 1, 2 and 10. Specifically, Figures 1, 2 and 10 have been revised to be designated by "Prior Art."

AMENDMENT

10/583,150

REMARKS

The Examiner's Action mailed on February 18, 2009, has been received and its contents carefully considered.

In this Amendment, Applicants have amended claims 1, 2 and 6-10, and added claims 11-18. Claims 1 and 2 are the independent claims. Claims 1-18 are pending in the application. For at least the following reasons, it is submitted that this application is in condition for allowance.

The Examiner has objected to the abstract of the disclosure and the specification for informalities. In response, Applicants have deleted the term "is disclosed" from the abstract, and have corrected the typographical errors within the specification, which were specifically noted by the Examiner, in the manner suggested by the Examiner. The abstract and the specification have been further amended, to correct further informalities found during review and to ensure that they comply with all official guidelines. It is requested that this objection be withdrawn.

The Examiner has rejected claims 1-10 under 35 USC 101 as being directed to non-statutory subject matter. In response, the limitations specifically noted by the Examiner have been deleted from the claims, rendering this rejection moot. It is thus requested that the Examiner's §101 rejection be withdrawn.

The Examiner has rejected claims 2 and 3 as being anticipated by Bono et al. (US 6,129,730) (hereafter simply Bono).

The original claim 2 recites "the number of small cortical screw threads is greater than the number of small cancellous screw threads." The Examiner appears to interpret the claimed 'number of small cortical screw threads' as being the total number

of small cortical screw threads in the entire cortical bone coupling part, and then states, in the Action, at page 4, line 2 from the bottom, that "in Bono, there are more small cortical screw threads (eight threads, i.e., 22a-d, 24a-d) than small cancellous screw threads (four threads, i.e., 22e-f, 24e-f)."

So as to more clearly specify the invention, claim 2 has been amended to recite the following features:

the number of small cortical screw threads formed on a single one of the ridge of the large cortical screw thread is greater than the number of small cancellous screw threads formed on a single one of the ridge of the large cancellous screw thread.

This feature is supported by Applicants' Figure 6, exemplary illustrating that **three** small cortical screw threads are formed on a **single** ridge of the large cortical screw thread, whereas **two** small screw threads are formed on a **single** ridge of the large cancellous screw thread.

In more detail, the ridge of the large cancellous screw thread 343` has the ridge width H1` (see, Figure 6 and the specification, paragraph <48>, lines 4-5), and **three** small cancellous screw threads 341` are formed on the **single** ridge with the width of H1` (see Figure 6 and the specification, paragraph <51>, lines 4-5). Likewise, the ridge of the large cortical screw thread 33` has the ridge width H2` (see, Figure 6 and the specification, paragraph <48>, line 10), and **two** small cortical screw threads 331` are formed on the **single** ridge with the width of H2` (see Figure 6 and the specification, paragraph <51>, lines 1-2).

In contrast, in Bono, every **single** ridge of large thread has the same number of small screw threads (i.e., **two** threads) formed on it (See Bono's Figure 4). In other

words, on each single ridge with the width of l_2 , **two** small screw threads, i.e., (22a, 24a), (22b, 24b), (22c, 24c), (22d, 24d), (22e, 24e) or (22f, 24f), are respectively formed.

It is thus submitted that claim 2, and claim 3 dependent therefrom, are not anticipated by the cited reference.

The Examiner has further rejected claim 1 under 35 USC 103 as being obvious over Bono in view of Mathys (US patent 5,403,136).

The original claim 1 recites "the cortical bone coupling part comprises a small cortical screw thread having a pitch, a root diameter and an outer diameter almost equal to a pitch, a root diameter and an outer diameter of the small cancellous screw thread." The Examiner considers that Bono's threads 22a-d, 24a-d may be modified to have a pitch, a root diameter, and an outer diameter almost equal to the threads 22e-f and 24e-f in view of Mathys.

So as to more clearly specify the invention, claim 1 has been amended to recite "a distance between **all** of two adjacent peaks of the cortical screw thread being the same throughout an entire length of the cortical bone coupling part."

As shown in Applicants' Figure 5, the cortical screw thread 331 has a constant pitch of p_4 (see also the specification, page 10, line 12 (i.e., paragraph <45>, line 3)). Thus, the distance between all of two adjacent peaks of the cortical screw thread 331 is the same.

In contrast, in Bono, the distance (l_3) between the peak of the thread 24a and the adjacent peak of the adjacent thread 22b is **twice** as the distance (l_2) between the peak of the thread 22a and its adjacent peak of the adjacent thread 24a (see Bono, col. 3,

lines 33-38, and Figure 4). Thus, Bono does not disclose that the distance between all of two adjacent peaks of the threads is the same, as amended claim 1.

In addition, Bono aims to create a large groove and a small groove (see Bono, col. 1, line 35). The distance between two adjacent peaks forming a large groove therebetweeen should be greater than the distance between two adjacent peaks forming a small groove therebetween. If the distance (ℓ_3) were made to be the same as the distance (ℓ_2), Bono cannot achieve its purposes. Thus, Bono teaches away from being modified by Mathys.

It is thus submitted that claim 1 is *prima facie* patentably distinguishable over the cited references.

The Examiner has further rejected claims 4 and 5 under 35 USC 103 as being obvious over Bono in view of Michelson, claim 6 over Bono in view of Mathys and further in view of Taras (US 2003/0158556), claims 7-8 over Bono in view of Taras, and claims 9-10 over Bono in view of Michelson and further in view of Taras. However, because none of Mathys, Taras and Michelson overcomes the above-noted deficiencies of Bono, and because these claims depend from independent claim 1 or independent claim 2, these claims are *prima facie* patentably distinguishable over the cited references for at least the same reasons as claims 1 and 2, as well as for the additional features recited therein.

New dependent claims 11-18 have been added. Because these claims depend from independent claim 1 or independent claim 2, these claims are *prima facie* patentably distinguishable over the cited references for at least the same reasons as claims 1 and 2, as well as for the additional features recited therein.

For example, claims 11 and 16 further recites, as is illustrated by way of an example in Applicants' Figures 5 and 6, referring to the reference characters for the purposes of the explanation only, "the uppermost part 31 or 31` is **unthreaded**, and the body part ((33(L2)+34(L1)) or (33` (L2`)+34` (L1`)) is threaded." In contrast, Bono's element 28 (which is equated with the claimed uppermost part by the Examiner) is threaded (see Bono, Figure 4).

Claims 12 and 17 further recite, as shown in Applicants' Figures 5 and 6, "the cortical bone coupling part 33 or 33` is disposed between the uppermost part 31 or 31` and the cancellous bone coupling part 34 or 34`, and the cortical bone coupling part 33 or 33` comes in direct contact with the uppermost part 31 or 31`," which is not disclosed or suggested by the cited references.

Claims 13 and 15 further recite, as shown in Applicants' Figures 5 and 6, "the uppermost part 31 or 31` has a top portion and a bottom portion, and has a conical shape which is reduced in diameter from the bottom portion to the top portion," which is not disclosed or suggested by the cited references.

Claim 14 further recites, as shown in Applicants' Figure 5, "the cortical bone coupling part 33 comes in direct contact with the bottom portion of the uppermost part 31," which is not disclosed or suggested by the cited references.

Claim 18 further recites, as shown in Applicants' Figure 6, "a width H2` of the ridge of the large cortical screw thread is **greater** than a width H1` of the ridge of the large cancellous screw thread." (see also the specification, page 11, lines 3-4 from the bottom). In contrast, in Bono, throughout the entire length of the dual lead threaded

section 18, the width of the ridge of the large cortical screw thread (22a-d, 24a-d) is the same as the width of the ridge of the large cancellous screw thread (22e-f, 24e-f).

It is submitted that this application is in condition for allowance. Such action and the passing of this case to issue are requested.

Should the Examiner feel that a conference would help to expedite the prosecution of the application, the Examiner is hereby invited to contact the undersigned counsel to arrange for such an interview.

Should any fees be required, the Commissioner is hereby authorized to charge such fees to our Deposit Account No. 18-0002, and advise us accordingly.

Respectfully submitted,



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Date

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